3.1.4. VALIDATION OF SATELLITE INSTRUMENT OZONE DATA

World primary standard Dobson instrument 83, maintained by CMDL, has been operated during summer months at MLO since 1979. Data obtained have been used to provide "ground truth" for verification of ozone measurements made by the NASA TOMS and SBUV instruments from aboard the Nimbus 7 satellite. The SBUV instrument became inoperable in 1992, followed by failure of the TOMS instrument in early 1993. However, a new TOMS instrument was launched aboard the Russian METEOR satellite in 1992.

Figure 3.7 compares the Dobson instrument 83 data with the original TOMS Version 6 data through 1992 and with the new TOMS data in 1993, showing agreement in results to within about ±0.5%. The long-term ozone measurement precision of Dobson instrument 83 is estimated to be ±1%.

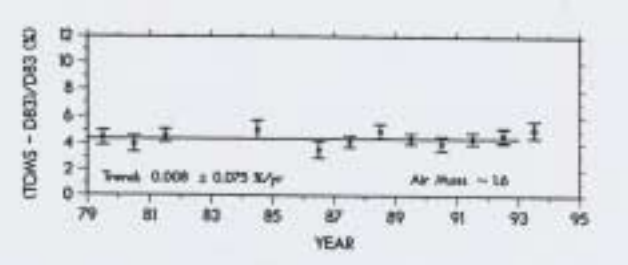

Fig. 3.7. Comparison of TOMS and Dobson data at MLO.